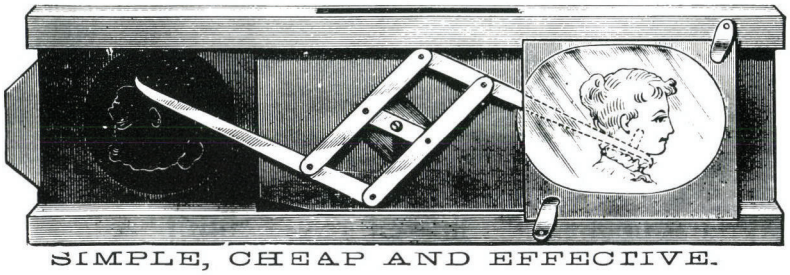
OBJECT/DOCUMENTATION:

We illustrate this device from the Lillian Boswell Collection and reproduce the corresponding Patent Specification of 1894 together with a contemporary advert.

HUGHES' NEW

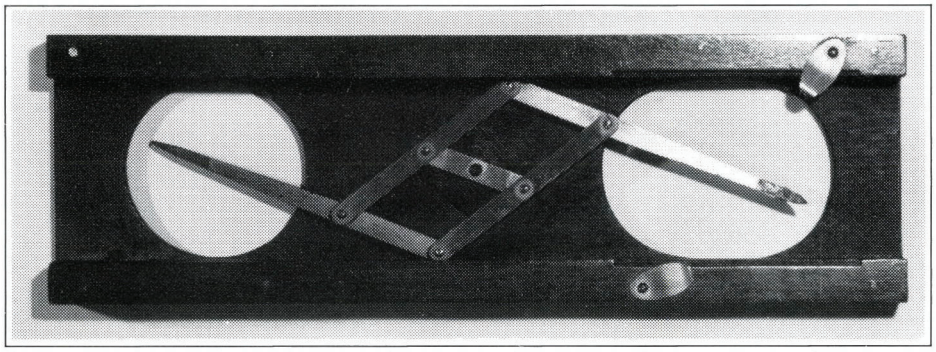
PENTOGRAPHIC LANTERN SKETCHER.

For copying or making fac-simile drawings or writings on any size screen before the audience.



SIMPLE, CHEAP AND EFFECTIVE.

Price only - 17s. 6d.



[This Drawing is a reproduction of the Original on a reduced scale.]

Fig 1

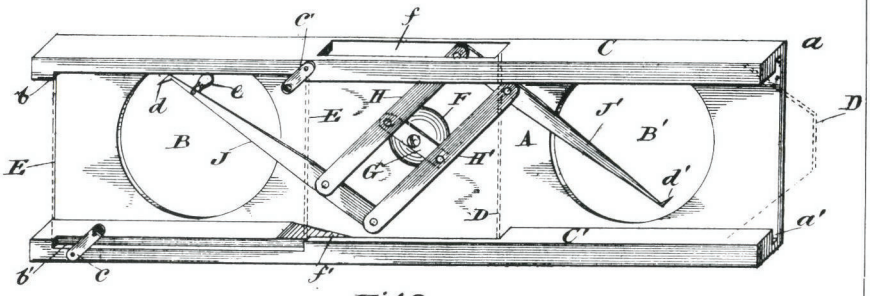


Fig 2

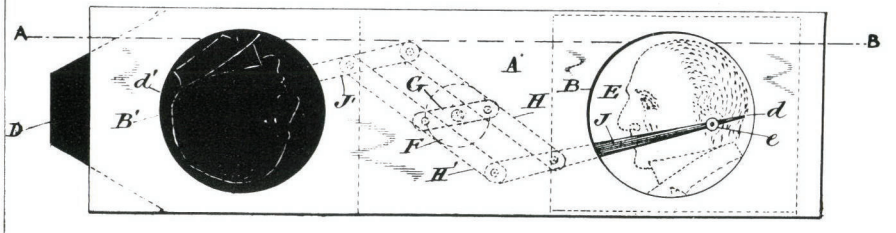


Fig 3

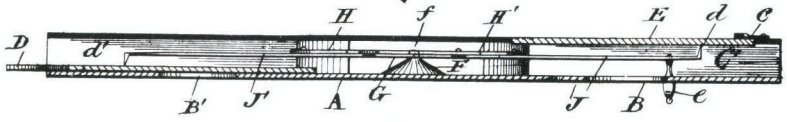
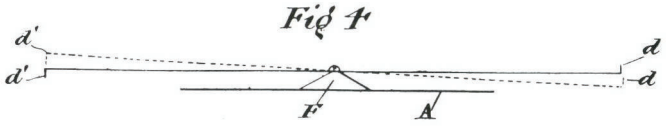


Fig 4



HUGHES' COMPLETE SPECIFICATION.

Mullay & Sons Photo-Litho

London, Printed by DARLING and SON, Ltd. for Her Majesty's Stationery Office. 1894.

N° 24,187 A.D. 1893

Date of Application, 15th Dec., 1893—Accepted, 27th Jan., 1894

COMPLETE SPECIFICATION.

Improvements in connection with Projecting Lanterns.

I, WILLIAM CHARLES HUGHES of Brewster House, Mortimer Road, Kingsland, in the County of Middlesex, Manufacturing Optician, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

My present invention for improvements in connection with projecting lanterns for dissolving view entertainments, relates to an apparatus capable of being placed in the slide carrier after the manner of an ordinary slide, and consists of a wood or other frame having two preferably circular openings or apertures, for the passage of the light from the lantern on to the screen, and covering one of said apertures or openings, I slide within the frame, a piece of glass coated, upon one side with some dark and opaque substance easily removed therefrom by a sharp edged or pointed tool, and covering the second opening or aperture I fix a piece of plain, colored or ground glass, preferably the latter, upon which has previously been etched, engraved or burnt in by acid, the outline of some subject, person, or other matter suitable for the entertainment on hand, and by the aid of a novel mechanical contrivance, somewhat resembling a pantograph, mounted upon the said frame, and provided with a sharp point upon each end, I am enabled by placing one of the said points upon the etching or engraving upon the one glass, and following the design or other matter thereon therewith, to produce upon the opaque glass, in reverse order, by reason of the second point scratching or removing the opaque surface therefrom, an exact reproduction of the matter upon the first glass, and project this upon the screen.

It will be understood by those versed in such matters, that if the light from a lantern, without a slide, be projected upon a screen, a white circle only would be seen thereon, and that if a slide, having one of its faces painted or coated with some black and opaque substance, be now passed through the slide carrier in front of the lens, the screen would become perfectly dark, and the white circle disappear, and that if scratches or marks be now made upon the opaque surface, within the radius of the lens, that by reason of the light passing therethrough white marks corresponding therewith, and resembling chalk marks upon a slate, would appear upon the screen, and it follows that the said marks or scratches may take the form of some well known subject, or the outline of the features of some well known person, and to produce this effect upon the screen at the desire of the audience, neatly, cleanly and by unseen means, and so add to the success and enjoyment of the entertainment, is the object and purpose of my invention.

In order that my said invention and the manner of using the same may be clearly understood I have hereunto appended a sheet of drawings, in which,

Fig. 1 is a perspective view of the entire apparatus forming the subject of my invention.

Fig. 2 is an elevation of the same as viewed from the opposite side to that shewn by Fig. 1.

Fig. 3 is a section of same taken upon the line A B of Fig. 2.

Fig. 4 is a diagram to be hereinafter explained.

I carry my invention into effect by constructing of any suitable material, preferably wood, a rectangular frame or carrier A, in which I provide two circular or other shaped openings B and B'. To the upper and lower surfaces of one face of A, I attach or form therewith, projecting or extending ridges C and C', one end of these being cut away so as to form in conjunction with A, grooves a a', and so

[Price 8d.]

arranged, that when a piece of glass D, (shewn by dotted outline in Fig. 1) is slid therein, one face of this would be in rubbing contact or close against A. In the opposite ends of C C' I form recesses b b' for the reception of a piece of glass E, (shewn by dotted outline in Fig. 1) which would be therein retained by clips c c' or any suitable and convenient equivalent therefor. Upon the frame A, centrally between B and B' or thereabouts, and upon the same side as the projections C C', I fix a pyramidal or other shaped centrally raised piece F, and upon this I pivotally mount the copying device which I have hereinbefore likened unto a pantograph, although the details of its construction differs materially therefrom, and constitutes an important item in the novelty of my invention. Upon the raised piece F I pivotally mount a bar G, and upon the ends of this I pivot, centrally of their length, a pair of bars H and H', and to one end of these I pivotally connect an arm J, and to the opposite end an arm J', in such a manner, that whatever position these may be caused to assume relatively to each other, the bars H and H' would always remain parallel to each other. The arm J is bent or curved at its free end into a sharp point d, in a direction away from the opening B, and capable of touching the glass E, and in like manner the free end of the arm J' has a sharp pointed curved end d', which extends therefrom towards the opening B', and always in rubbing contact with the glass D, when the point d is in like contact with the glass E. The arm J is provided with a handle or finger hold e extending therefrom through the opening B, and by means of this the pointer d may be moved to any part of the glass E, within the radius of the opening B, and as this was moved about B, the pointer d' would be correspondingly moved about B', but in reverse order, that is to say, if d be moved towards the top of B, the pointer d' would be in exactly the same position at the bottom of B', or if d be moved to the right of B, d' would be moved to the left of B', and so on, and in order that the pointer d' may not graze upon the glass D, when it becomes necessary to move the pointer d from one extreme portion of B to another, the arm G would be mounted upon the raised piece F in such a manner, that as the pointer d recedes from the glass E, the pointer d' would recede a like distance from the glass D, as illustrated by the diagram Fig. 4.

In order that the bars H H' may not collide with the projections C C', openings f and f' are provided in these for that purpose.

The operator would be supplied with any number of glasses E, which may be either plain, colored or ground, and upon each of these some subject would be etched, which may be effected either by the means of fluoric acid, sand blast, or a lapidarys wheel, the object to be attained being that the said subjects must be cut or indented in the one face of the glasses E. The operator would also be supplied with a like number of glasses D, one side of each of which would be coated with some opaque substance (preferably black) that could be easily removed by the pointer d'. The manner of operation is as follows.

The frame A, and its copying device would be placed in the slide carrier of the lantern with the aperture B' in the line of focus, and therein fixed if desired, and presuming that the stock of glasses E, contain the profiles of eminent men, or well known public persons, the operator would appeal to the audience to name what well known person they would like to have drawn upon the screen, and he or she having been named, the operator would select the glass E having the profile of that person engraved thereon, which he would place in the apertures b b' with its engraved side next himself and the pointer d, and having fixed this by the clips or their equivalents c c', he would raise or withdraw the pointer d' clear of E, and slip into grooves a a' one of the blackened glasses D, with its blackened surface towards the pointer d', and this as before stated would place the screen in darkness. He would then by means of the handle e cause the pointer d to enter a predetermined part of the engraving upon E, and by following the said engraved line with d the point of d' would traverse the blackened surface of the glass D, and remove therefrom the counterpart of the profile on E, and by reason of the light passing through the thus cleared portion of D, the outline or profile would

gradually unfold itself upon the screen, and appear as if some unseen hand was drawing upon a black board with a piece of chalk, to the intense delight of the audience. The operation as described will be clearly understood by reference to the drawings, particularly Fig. 2.

The same apparatus may be usefully employed by scientific geometrical, academical and other lecturers, for rendering more clearly to their audience the subject they wish to be understood.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is,

1st. In combination with a projecting lantern, for producing upon a screen, the growing outline of any desired scene, features, map or other subject, the construction and use of the apparatus herein described, connected combined and operating substantially as herein set forth and shewn by the accompanying drawings.

2nd. In combination with a projecting lantern, the construction and use of a frame A, with apertures B B', and extensions C C', with openings f and f', and grooves a a' for receiving a blackened or otherwise opaque glass D, and apertures b b' for receiving a plain, colored or ground glass E, having engraved thereon any desired subject or outline, and retained in position by clips or their equivalents c c'. The manner of reproducing upon D, the counterpart of the matter contained on the matrix E, by means of the reproducing apparatus, consisting of an arm G, pivotted upon a raised piece F, and to bars H H', pivotally connected to arms J, J', the former provided with a handle or finger hold e and pointer d for following the matter engraved upon E, the latter with a pointer d' for removing the blackened surface of D, in obedience to the movements of d, the whole connected combined and operating substantially as and for the purposes herein described and shewn by the accompanying drawings.

3rd. The pantographic reproducing apparatus substantially as described and shewn.

Dated this 15th day of December 1893.

GEO. THOS. HYDE,
4, Moorfields, Fore Street, London, E.C., Agent for the Applicant.

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